

DUSTBUNNY

FX TYPE: Fuzz

Based on the Tonebender™

Enclosure Size: 1590A

"Softie" compatibility: none

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Overview

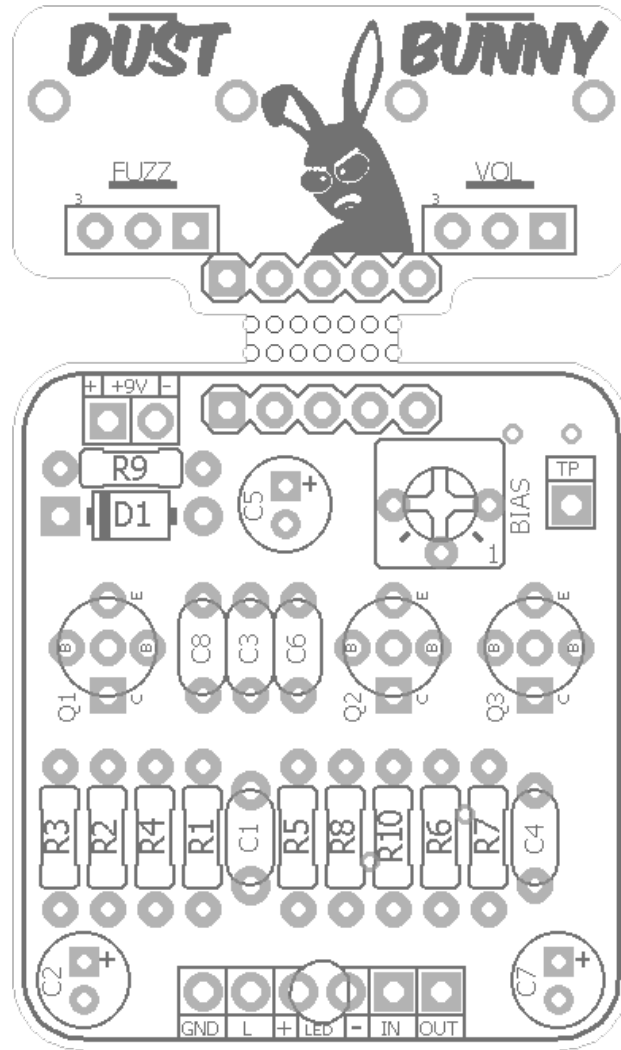
The DustBunny is a simple, negative ground silicon Tonebender fuzz fitted for a 1590A enclosure.

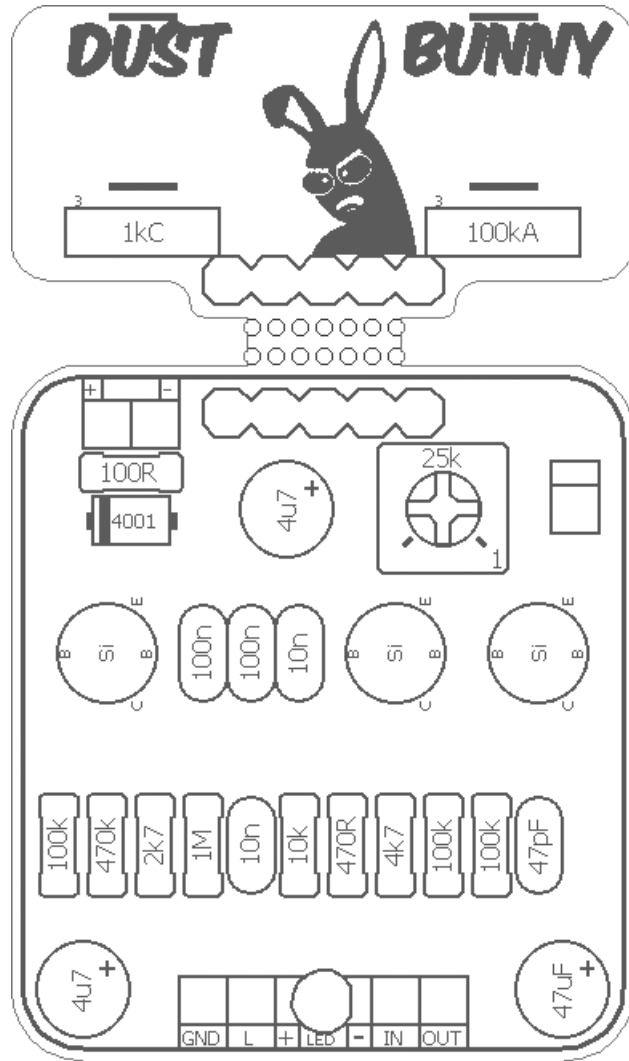
Controls

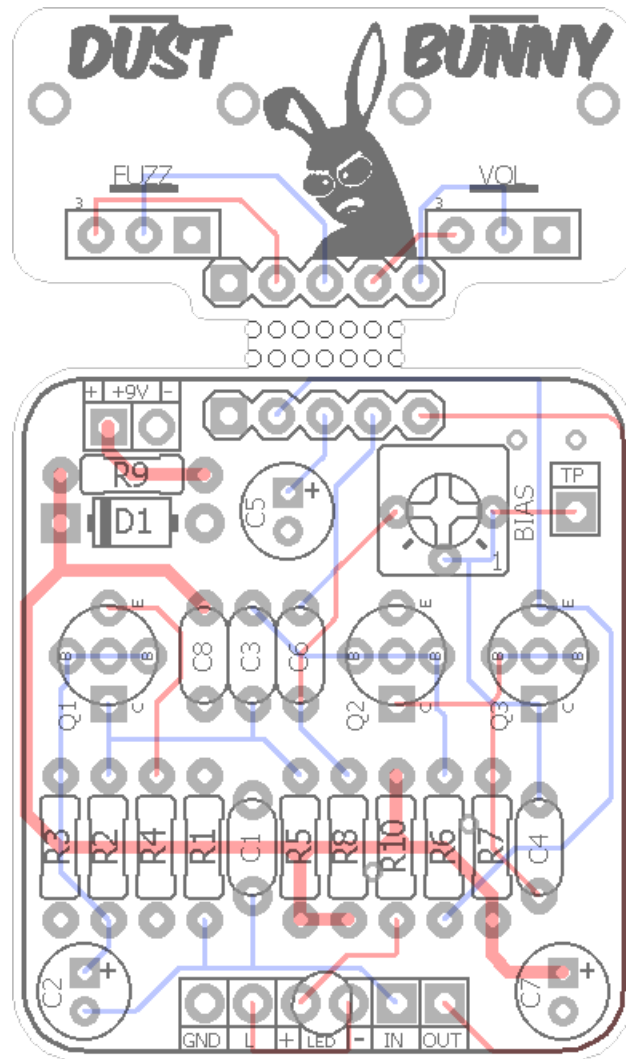
- **FUZZ:** Fuzz from min to max.
- **VOL:** Output

Terms of Use: You are free to use purchased **Dustbunny** circuit boards for both DIY and small commercial operations. You may not offer **Dustbunny** PCBs for resale or as part of a "kit" in a commercial fashion. Peer to peer re-sale is fine, though.

Technical assistance for your build(s) is available via the [madbeanpedals forum](#). Please go there rather than emailing me for assistance on [builds](#). This is because (1) I'm not always available to respond via email in a timely and continuous manner, and (2) posting technical problems and solutions in the forum creates a record from which other members may benefit.







Resistors		Caps		Diodes	
R1	1M	C1	10n	D1	1N4001
R2	470k	C2	4u7	Transistors	
R3	100k	C3	100n	Q1 - Q3	NPN -Si
R4	2k7	C4	47pF	Trimmer	
R5	10k	C5	4u7	BIAS	25k
R6	100k	C6	10n	Pots	
R7	100k	C7	47uF	FUZZ	1kC
R8	470R	C8	100n	VOL	100kA
R9	100R				
R10	4k7				

Value	QTY	Type	Rating
100R	1	Metal / Carbon Film	1/4W
470R	1	Metal / Carbon Film	1/4W
2k7	1	Metal / Carbon Film	1/4W
4k7	1	Metal / Carbon Film	1/4W
10k	1	Metal / Carbon Film	1/4W
100k	3	Metal / Carbon Film	1/4W
470k	1	Metal / Carbon Film	1/4W
1M	1	Metal / Carbon Film	1/4W
47pF	1	Ceramic / MLCC	16v min.
10n	2	Film	16v min.
100n	2	Film	16v min.
4u7	2	Electrolytic	16v min.
47uF	1	Electrolytic	16v min.
1N4001	1		
Si	3	NPN - low hFE	
25k	1	Bourns 3362p	
1kC	1	PCB Mount, Metal Shaft	9mm
100kA	1	PCB Mount, Metal Shaft	9mm

Low profile Electrolytic caps:

<http://smallbear-electronics.mybigcommerce.com/electrolytic-radial-low-profile-16v-1-f-100-f/>

9mm PC Mount pots (1kC, 100kA):

<http://smallbear-electronics.mybigcommerce.com/alpha-single-gang-9mm-right-angle-pc-mount/>

Bourns 3362p (25k):

<https://www.mouser.com/ProductDetail/Bourns/3362P-1-253LF?qs=sGAEpiMZZMvygUB3GLcD7vRbQqL9uMLMqlpepdvyyRc%3D>

Bourns 3362p (20k):

<https://www.taydaelectronics.com/potentiometer-variable-resistors/cermet-potentiometers/3362p/20k-ohm-trimmer-potentiometer-cermet-1-turn-3362p.html>

Thinline DC Jack:

<http://smallbear-electronics.mybigcommerce.com/dc-power-jack-all-plastic-unswitched-2-1-mm/>

Enclosed Mono:

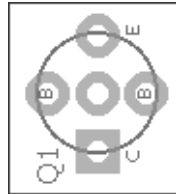
<http://smallbear-electronics.mybigcommerce.com/1-4-in-mono-enclosed-jack/>

<http://smallbear-electronics.mybigcommerce.com/1-4-in-mono-enclosed-switchcraft-111x/>

Lumberg Mono:

<http://smallbear-electronics.mybigcommerce.com/lumberg-1-4-compact-shrouded-mono-jack/>

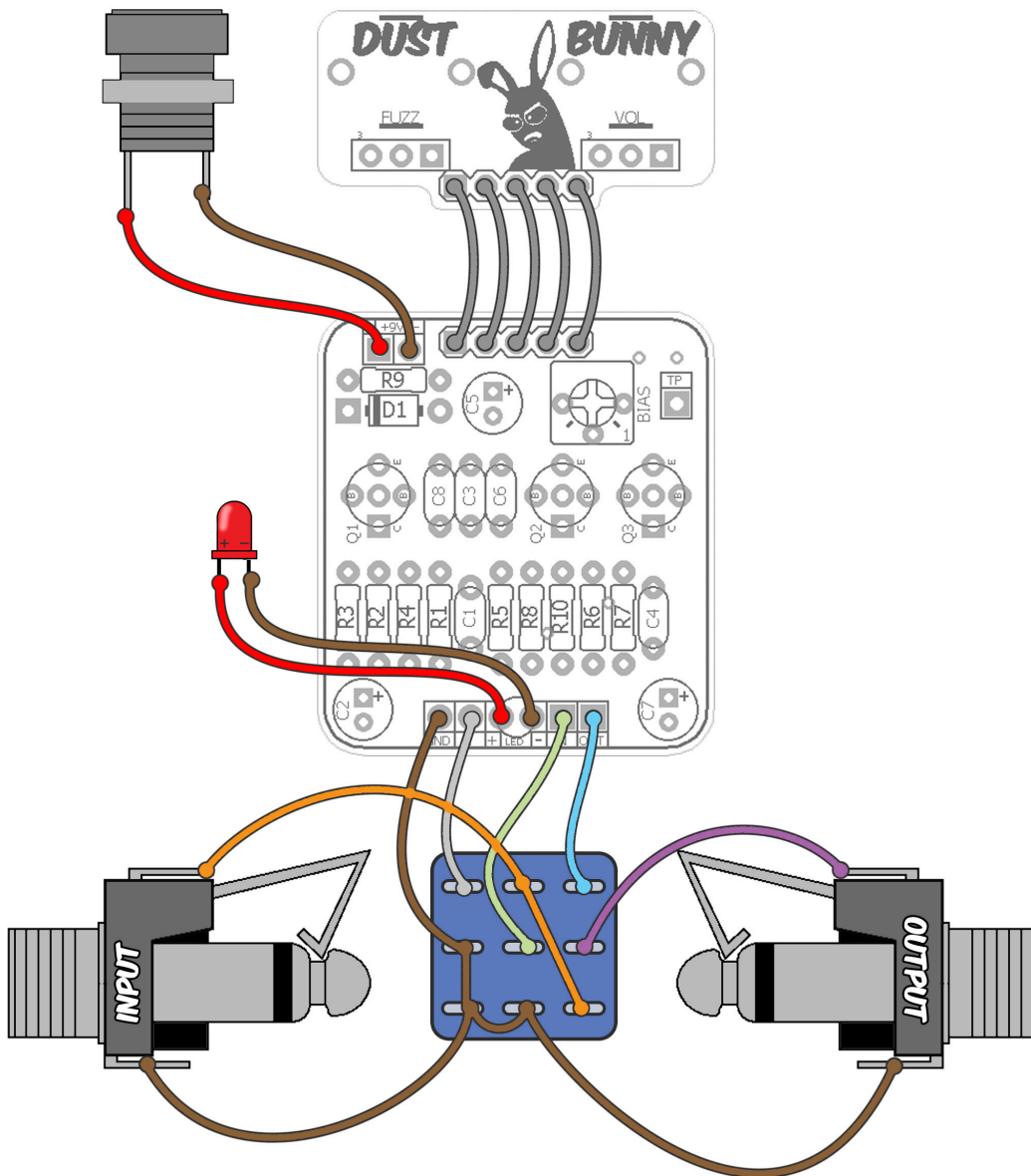
- There are a variety of NPN silicon transistors that will work in this build. For mine I did the following - Q1: BC108, Q2, Q3: BC207B (140hFE and 160hFE, resp.) You could use all BC108/109 or find a cool mojo mix. Smallbear has plenty to offer for Tonebender types. Generally smaller gain buckets are better (300 hFE and below).
- Each transistor has a multi-pin layout so if you have straight pin, triangle pin, CBE, EBC, variations in your transistors they will mount easily. The middle row of three pads are for the base pins of the transistors.



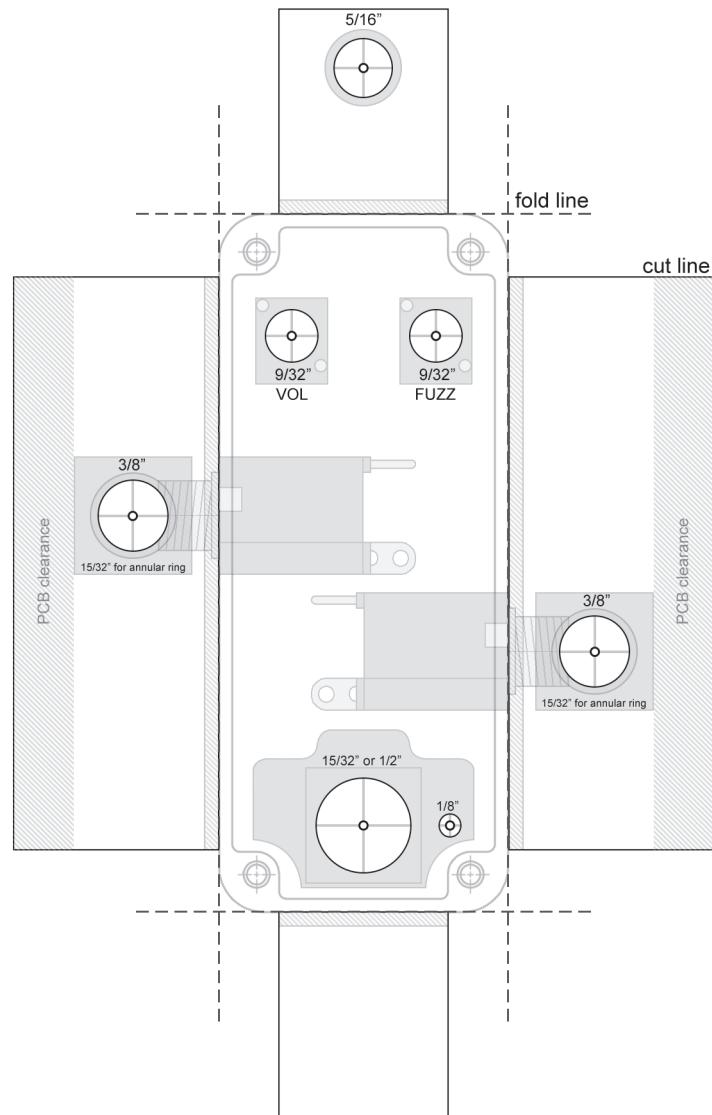
- C4 is optional. A small cap between collector and base of Q3 can shave off a little hiss or excessive highs, if desired. Suggest you socket it or just insert the 47pF loose in the pads to see if you like what it does. You can use higher or lower values - I find 47pF to be a good start without removing too much high frequency.
- I've used 100n for C6 in previous Tonebender builders. It will add a little more bass. In this build I stuck with 10n and liked the balance just fine.
- Set the bias of the Q3 collector using your multimeter by turning the trimmer until you read about 4.5v on the "TP" (test point) pad.

MODS

- This version can get very compressed at the highest fuzz setting. Personally, I like this a lot because there is a very good range of less compressed fuzz tones on lower settings. However, you can mitigate the compression somewhat by lowering the value of R7. The caveat is the lower the value of R7 the more C4 starts to act like a (unwanted) filter. So, you may have to remove C4 in that case, or lower it to something like 10pF.
- C1 is probably a good place to start if you want have more high end or want the effect to be brighter when rolling down the guitar knob. Smaller values will bring some highs back, but don't go too far: you might start to pick up radio or get unwanted noise!



Note: Drill Guides are approximate and may require tweaking depending on the types of jacks, switches and pots you use.



- This template will work for either mono enclosed jacks or the "Lumberg" style.
- It uses the "Thinline" style DC Jack.
- It also shows the 3PDT02 bypass PCB but this is not required. If you are wiring straight to a 3PDT you can use the same LED location on the right side or choose a different spot.

Q1	DC	Q2	DC	Q3	DC
C	7.3	C	1.3	C	4.6
B	1.04	B	0.57	B	1.35
E	0.52	E	0	E	0.72

- 9.42vDC One Spot
- Current Draw: ~ 2mA

